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EXAMINER	
REZA, MOHAMMAD W	

ART UNIT	PAPER NUMBER
2136	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,018	TAN ET AL.	
	Examiner	Art Unit	
	Mohammad W. Reza	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-42 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In these claims applicants mention "a number **x of locations** …. generating **x pseudo-random file names** and **x corresponding paths** based ….. pairing the x generated file names and the x generated paths to form the **x locations**; ……. **x generated locations**" which is generally narrative and indefinite with the invention. Applicants do not point out clearly which options include in the present invention by "**all these number of x**", and do not specifically mention what is value included by x. It can be any value from zero to infinity and which is broad, indefinite. The office will interpret these words with the regarding claims as best understood for applying the appropriate art for rejection purposes.

3. Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In these claims applicants mention "based **at least in part** on the obtained information, whereby the generated file names and corresponding paths are likewise **at least nearly unique** to the

computing device" which is generally narrative and indefinite with the invention. Applicants do not point out clearly which options include in the present invention by "**at least in part**, and **at least nearly unique**". The office will interpret these words with the regarding claims as best understood for applying the appropriate art for rejection purposes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al hereafter Johnson (US patent publication 20030163718) in view of Takayuki Okada hereafter Okada (US Patent 6704872).

5. As per claim 1, Johnson discloses a method comprising: determining a number x of locations at which at least a portion of the state store is to be stored at; generating x pseudo-random file names and x corresponding paths based at least in part on the obtained information, whereby the generated file names and corresponding paths are likewise at least nearly unique to the computing device; pairing the x generated file names and the x generated paths to form the x locations; and storing the state store according to the x generated locations (paragraphs 0020, 0022, 0043-0046). Although,

Johnson discloses receiving information for specific computing device and address for storing that information is also specific to memory location (paragraphs 0020, 0022, 0043-0046), he does not explicitly disclose obtaining information at least nearly unique to the computing device; file names and corresponding paths are likewise at least nearly unique to the computing device and storing the state store according to the x generated locations. Nevertheless, it is well known in the network security art at the time of invention that specific computing device and address for storing that information is also specific to memory location. Exemplary of this is Okada who discloses obtaining information at least nearly unique to the computing device; file names and corresponding paths are likewise at least nearly unique to the computing device and storing the state store according to the x generated locations (abstract, col. 3, lines 31-60).

Accordingly, it would been obvious to one of ordinary skill in the network security art at the time of invention was made to have incorporated Okada's teachings of processor with a function to prevent illegal execution of a program, an instruction executed by a processor and a method of preventing illegal execution of a program with the teachings of Johnson, for the purpose of specifically describing the information storing and protecting location (col. 3-5).

6. As per claim 2, Johnson does not disclose the method comprising obtaining information specific to the computing device comprising a hardware identification (HWID) thereof. However, Okada discloses obtaining information specific to the

computing device comprising a hardware identification (HWID) thereof (abstract, col. 3, lines 31-60).

The same motivation that was utilized in the combination of claim 1 applies equally as well to claim 2.

7. As per claim 3, Johnson discloses the method comprising obtaining information specific to the computing device comprising an install time of an operating system thereof (paragraphs 0020, 0022, 0043-0046).

8. As per claim 4, Johnson discloses The method of claim 1 comprising obtaining information specific to a current period of time, whereby the state store is stored according to a location that varies according to such current period of time (paragraphs 0020, 0022, 0043-0046).

9. As per claim 5-8, Johnson discloses the method comprising determining the number x of locations as a number n of parts in which the state store is to be divided times a number m of copies of each part that are to be stored, generating x pseudo-random file names, each having a pseudo-random name length, generating x paths, each path comprising one of a plurality of levels of an operating system directory path on the computing device and generating x paths, each path comprising one of a plurality of levels of a registry path on the computing device (paragraphs, 0092-0098, 0124-0125).

10. As per claim 9, Johnson discloses the method wherein storing the state store according to the x generated locations comprises: protecting the state store by performing at least one of: signing the state store to produce a signature and appending

the signature to the state store; and encrypting the state store to produce an encrypted state store; dividing the state store into n parts; saving each of the n parts m times according to the x=n times m formed locations (paragraphs 0020, 0022, 0043-0046).

11. As per claim 10, Johnson discloses the method wherein storing the state store according to the x generated locations comprises: dividing the state store into n parts; protecting the state store by signing at least one of the n parts of the state store to produce a signature and appending the signature to the part; and saving each of the n parts according to the x formed locations (paragraphs 0020, 0022, 0043-0046).

12. As per claim 11, Johnson discloses the method of comprising retrieving the stored state store, the retrieving comprising: obtaining the information at least nearly unique to the computing device; determining the number x of locations at which at least a portion of the state store is stored at; generating the x pseudo-random file names and the x corresponding paths based at least in part on the obtained information; pairing the x generated file names and the x generated paths to form the x locations; and retrieving the state store from the x generated locations (paragraphs 0020, 0022, 0043-0046).

13. As per claim 12, Johnson discloses the method wherein the state store has been divided into n parts and each of the n parts has been saved according to the x formed locations, and wherein retrieving the stored state further comprises: retrieving the n parts from the x locations; reconstituting the state store from the retrieved n parts thereof; if the reconstituted state store is encrypted, decrypting same; and if the reconstituted state store is signed to produce a signature, verifying the signature (paragraphs 0020, 0022, 0043-0046).

14. As per claim 13, Johnson discloses the method wherein the state store has been divided into n parts and each of the n parts has been saved m times according to the x formed locations, and wherein retrieving the stored state comprises reconstituting m copies of the state store from the retrieved n parts thereof, and further comprises randomly selecting one of the m reconstituted copies (paragraphs 0020, 0022, 0043-0046).

15. As per claim 14, Johnson discloses the method wherein each file name has a length and wherein generating x pseudo-random file names based at least in part on the obtained information comprises: hashing data including the obtained information to produce a first hash comprising a string of numbers; for each file name length, applying a pre-defined serial portion of the first hash to a function to result in the file name length; and for each Nth file name: performing a predetermined modification to the Nth hash (paragraphs 0020, 0022, 0043-0046).; hashing the modified Nth hash to produce an (N+1)th hash comprising a string of numbers, whereby the first hash is employed to produce a second hash for the first file name, the second hash is employed to produce a third hash for the second name, etc.; and for each file name character of the Nth file name, applying a pre-defined serial portion of the (N+1)th hash to a function to result in the file name character (paragraphs 0020, 0022, 0043-0046).

16. As per claim 15, Johnson discloses the method wherein each file name length has a preset minimum and maximum, and wherein applying the pre-defined serial portion of the first hash to a function to result in the file name length comprises applying

the pre-defined serial portion of the first hash to the modulo function: Length=[serial portion mod(maximum-minimum)]+minimum (paragraphs 0020, 0022, 0043-0046).

17. As per claim 16-17, Johnson discloses the method wherein applying the pre-defined serial portion of the (N+1)th hash to a function to result in the file name character comprises applying the pre-defined serial portion of the first hash to a conversion table predefined for the computing device, wherein the modification comprises at least one of a bit shift, a reverse ordering, and a swapping (paragraphs, 0092-0098, 0124-0125).

18. As per claim 18-19, Johnson discloses the method wherein each path comprises one of a plurality of levels of an operating system directory path on the computing device, and wherein generating x paths based at least in part on the obtained information comprises: hashing data including or based on the obtained information to produce a path hash comprising a string of numbers; for each path (paragraphs 0020, 0022, 0043-0046), applying a pre-defined serial portion of the path hash to a function to result in a level for the path, wherein each path level has a preset minimum and maximum, and wherein applying the pre-defined serial portion of the path hash to a function to result in the level for the path comprises applying the pre-defined serial portion of the path hash to the modulo function: Level=[serial portion value mod(maximum-minimum)]+minimum (paragraphs, 0092-0098, 0124-0125).

19. As per claim 20, Johnson discloses the method comprising defining successive periods of time, and for each successive period of time: obtaining information at least nearly unique to the computing device; determining a number x of locations at which at

least a portion of the state store is to be stored at; generating x pseudo-random file names and x corresponding paths based at least in part on the obtained information and based at least in part on indicia relevant to the period of time (paragraphs 0020, 0022, 0043-0046), whereby the generated file names and corresponding paths are likewise at least nearly unique to the computing device and unique to the period of time; pairing the x generated file names and the x generated paths to form the x locations; and storing the state store according to the x generated locations, whereby the state store is moved during each successive period of time (paragraphs, 0092-0098, 0124-0125).

20. As per claim 21, Johnson discloses the method comprising: obtaining alternate information relevant to the computing device; generating at least one pseudo-random file name and at least one corresponding path based at least in part on the alternate information and pairing same to form at least one alternate location; and storing the obtained information as original information according to the at least one generated alternate location (paragraphs 0020, 0022, 0043-0046), whereby if the obtained information changes on the computing device, such changed information cannot be employed to retrieve the state store but the alternate information can be employed to retrieve the original information and the original information can be employed to retrieve the state store (paragraphs, 0092-0098, 0124-0125).

21. As per claim 22, Johnson discloses a computer readable medium comprising: determining a number x of locations at which at least a portion of the state store is to be stored at; generating x pseudo-random file names and x corresponding paths based at least in part on the obtained information, whereby the generated file names and

corresponding paths are likewise at least nearly unique to the computing device; pairing the x generated file names and the x generated paths to form the x locations; and storing the state store according to the x generated locations (paragraphs 0020, 0022, 0043-0046). Although, Johnson discloses receiving information for specific computing device and address for storing that information is also specific to memory location (paragraphs 0020, 0022, 0043-0046), he does not explicitly disclose obtaining information at least nearly unique to the computing device; file names and corresponding paths are likewise at least nearly unique to the computing device and storing the state store according to the x generated locations. Nevertheless, it is well known in the network security art at the time of invention that specific computing device and address for storing that information is also specific to memory location. Exemplary of this is Okada who discloses obtaining information at least nearly unique to the computing device; file names and corresponding paths are likewise at least nearly unique to the computing device and storing the state store according to the x generated locations (abstract, col. 3, lines 31-60).

The same motivation that was utilized in the combination of claim 1 applies equally as well to claim 22.

22. Claims 23-42 are listed all the same elements of claim 2-21 but in medium form rather than method form. Therefore, the supporting rationales of the rejection to claim 2-21 apply equally as well to claim 23-42.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad w. Reza whose telephone number is 571-272-6590. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MOAZZAMI NASSER G can be reached on (571)272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mohammad Wasim Reza

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6/10/07